

**IDENTIFICATION OF GENES INVOLVED IN EPIPHYTIC SURVIVAL OF
XANTHOMONAS ALBILINEANS, THE CAUSAL AGENT OF LEAF SCALD OF
SUGARCANE**

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Xanthomonas albilineans is a bacterial plant pathogen that is mainly spread by infected cuttings and contaminated harvesting tools. However, at least some strains of the pathogen are spread by aerial means and are able to colonize the phyllosphere before entering the host plant. The objective of this study was to identify molecular factors that are involved in the epiphytic phase of the disease. Several wild-type strains of *X. albilineans* and a related non pathogenic species, as well as putative pathogenicity mutants of *X. albilineans*, were studied for their capacity to survive on sugarcane leaves. Four week-old tissue-cultured plantlets of cultivar CP68-1026 were immersed in bacterial suspensions at 10^7 cfu/ml. Foliar imprints of the plantlets were performed on selective growth medium 14 days after inoculation. The wild-type strain of *X. albilineans* that was not associated with aerial transmission of the pathogen, and that belongs to genetic group PFGE-A, had a lower epiphytial survival capacity than the wild-type strains that are aerielly transmitted and that belong to genetic group PFGE-B. An outer-membrane A (XaOmpA1) mutant and surface polysaccharide mutants completely lost their capacity to survive on the leaf surface. In contrast, a motility mutant, a mutant affected in production of small molecules, and the non pathogenic species related to *X. albilineans* were all able to colonize the phyllosphere similarly to wild-type strains that are transmitted by aerial means. Mutants of the *rpf* gene cluster, involved in bacterial communication, showed different behaviors depending on the mutated gene.